

**Whirling Disease Supplemental Information Report**  
**Assessment in Response to Discretionary Review of Appeals to MBNF LRMP**  
**To Explain the Basis For The Assertion that Trail Use Can Contribute To The**  
**Propagation And Spread Of Whirling Disease**

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Introduction:

In the Chief's appeal decision for the Medicine Bow Forest Plan Revision it stated: "The Regional Forester is instructed to supplement the FEIS to explain the basis for the assertion that trail use can contribute to the propagation and spread of whirling disease in trout."

In our original discussion of whirling disease on FEIS pg 3-51 it states: "In addition, trail use can contribute to the propagation and distribution of pathogenic agents such as the whirling disease protozoan, coliform bacteria, and Chytrid fungus in aquatic environments. Whirling disease has profoundly impacted trout fisheries in the western United States and chytrid fungus appears to be a causal agent in the decline of boreal toad populations in the Rocky Mountains. Other native amphibians may be impacted by the Chytrid fungus too. Finally, trails can provide relatively easy access and opportunities to those who would introduce exotic species into aquatic environments. Given the popularity of trail networks among Forest users, it is reasonable to expect increasing demands by the public for additional hiking trails over the coming decades. An expanded trail network could result in the alteration and degradation of aquatic, riparian, and wetland resources."

To better explain the basis for the assertion that trail use can contribute to the disease's propagation and distribution Greg Eaglin Soil, Fisheries, and Watershed Program Manager for the Medicine Bow – Routt National Forests composed this Supplemental Information Report.

Explanation: Trail networks can facilitate the spread of whirling disease among streams and lakes because of the utility of these networks. Typically, trails are constructed to direct human and livestock (e.g. horses) traffic away from environmentally-sensitive sites or to circumnavigate difficult (e.g. ground cover) off-trail routes. Additionally, trail routes are constructed to afford less strenuous travel to humans and livestock and to encourage their use rather than encourage potentially destructive or hazardous travel off trail. Anglers who use trails to access streams and lakes will do so for the aforementioned reasons. And, anglers are known vectors for spreading the most environmentally-durable, whirling disease life stage: myxospores.

Graduate research conducted at Montana State University has elucidated some of the transport mechanisms by which anglers spread myxospores among waters (Gates 2007). Myxospores can become attached to hip boots and chest waders, especially those that are

made of neoprene and have felt-soled boots. Myxospores become attached to the interstitial spaces in the neoprene and felt material. In addition, myxospores can be transported and deposited from water body to water body in soil and mud that is attached to angling apparel and footwear; by extension, some myxospores can be deposited in trail soil and mud where they can remain viable for months or in some cases years before they deteriorate. Because many anglers are not conscientious about cleaning or disinfecting their gear before they move between or among waters, it is likely that if they have collected myxospores from contaminated waters and they are traveling to various waters connected by trails, then the trail, indirectly, facilitate the spread of whirling disease; if trails are unavailable to facilitate travel by anglers, then it is likely that fewer anglers will expend the energy to bushwhack to other local but distant streams and lakes.

### Reference

Gates, K.K. 2007. Myxospore detection in soil and angler movement in Southwestern Montana: implications for whirling disease transport. M.S. Thesis. Montana State University, Bozeman Montana.